# Clumber Spaniel Health Foundation

www.clumberhealth.org

## Immune Mediated Hemolytic Anemia, DNA Research, and You

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Immune Mediated Hemolytic Anemia (IMHA, formerly known as AIHA, AutoImmune Hemolytic Anemia) has been a serious health issue for Clumbers and other spaniels. A dog can be perfectly healthy one day, and literally dying the next. Sometimes treatment is effective; sadly, all too often it is not, and the end result is tragedy. IMHA can affect many breeds of dogs, including mixed breeds, but is over-represented in several breeds, supporting the idea that there is an underlying genetic component to this condition.

In a susceptible dog, triggers such as medications (sulfa drugs especially), and perhaps vaccines can set off the disease. The research on vaccines is unclear – one very good study showed that 25% of all dogs with IMHA had been vaccinated in the prior three months. However, the authors took great care to point out that in any random sample of dogs, it was likely that 25% of them would have been vaccinated in the preceding three months, making the relationship unclear.

What is clear is that IMHA can kill Clumbers. It is a devastating disease for both dog and owner, and answers are needed. Dr. Lorna Kennedy (Senior Scienties, Centre for Integrated Genomic Medical Research) and her research team at the University of Manchester are hard at work trying to find genetic answers to this problem. The Clumber Spaniel Health Foundation has provided initial funding for a research project that enables them to focus a keen genetic eye on the basic DNA difference that may predispose dogs to IMHA. Their research started with Springer and Cocker spaniels, and has been expanded to include Clumbers, thanks to a grant from the Clumber Spaniel Health Foundation. They are investigating the MHC (major histocompatibility complex), which plays a major role in the body's immune response.

To do this, the research group needs two things: funding, and DNA. The response to requests for DNA from Clumbers with IMHA has been inspiring. Several owners of affected dogs have stepped up to contribute DNA from affected dogs. These include Jim and Shirley Fankhauser, Janice Friis, Larry and Mary Mitchun, Betty Bauerle, Paula Minor, and Lynn and Randy Moscarello, DVM, (all owners allowed their names to be used for this report). Several of these people had the strength and vision to allow DNA to be submitted from their dogs while they were ill, or even when they had recently passed away. One contributed frozen semen from a dog long deceased, which had been stored. Two had previously banked their dog – and when they became aware of the research, they were glad to have the already banked DNA available for the project. Jim Fankhauser has worked tirelessly to provide samples from entire families for the project. The samples from these affected dogs are priceless, and are enabling the research team to unlock some of the genetic mysteries of this disease.

You can easily submit DNA to the CSCA DNA bank from your Clumber(s), to aid in future research of this kind. The CSCA and the CSHF have partnered with the Canine Phenome Project, housed at the University of Missouri, in conjunction with Dr. Gary Johnson's lab. Information can be found at:

www.caninephenome.org.

You will need to fill out the identification information form, and a survey on each dog's characteristics and health. The information on each dog is password protected.

You will also need to submit a blood sample for DNA isolation. There is a cost of $40 per sample, which includes a PDP1 test. The DNA will be used in future research beyond the IMHA project. It is very important to remember that DNA from all dogs is needed, whether healthy or ill, show dogs or companions. First, healthy dogs are useful as controls in most research. The DNA of healthy dogs helps to verify that suspected genetic differences do indeed exist in healthy vs. affected dogs. Pedigree information and families consisting of affected as well as unaffected animals propel research findings. Also, the more samples researchers have to work with, the more valid the results will be.

Your contributions are important. Financial contributions to the Health Foundation enable us to find and fund more research projects for the betterment of canine health. DNA donations (blood, fresh frozen tissue samples, tails from litters being docked, and frozen semen can all be used) that enrich the already existing DNA bank enable the scientific work to progress more swiftly and more completely. Together, Clumber fanciers worldwide can work towards a healthier future for all dogs, and especially the Clumbers we all love so much.